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**PRIMARY TREATMENT AND SLUDGE DEWATERING
BY VIBRATING SCREENS**

William C. Wanderer, Jr.

**Sacramento County Department of Public Works
Sacramento, California**

29 April 1968

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Grant No. WPD 177-01

PRIMARY TREATMENT AND SLUDGE
DEWATERING BY VIBRATING SCREENS

SACRAMENTO COUNTY
DEPARTMENT OF PUBLIC WORKS
UTILITIES DIVISION

WILLIAM C. WANDERER, JR., PROJECT DIRECTOR
CHIEF, UTILITIES DIVISION

INITIAL PROGRESS REPORT FOR
PERIOD JUNE 1, 1967 to MAY 31, 1968

April 29, 1968

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Springfield VA 22151

PROJECT SUMMARY

The objectives of this ^{the report} proposal are to demonstrate the feasibility of using vibrating screens to separate solids from waste water and to thicken raw sludge.

Plans and specifications for the construction of the vibrating screen demonstration facility have been prepared, advertised for bid, and a contract has been awarded. Construction of the facility is progressing satisfactorily. The demonstration units have been delivered to the project site and an experienced sewage treatment plant operator has been assigned to the project. He is currently familiarizing himself with the construction of the facility and laboratory testing equipment. Sacramento County is collecting data on the quality of the plant influent and effluent. Tests have been performed on the raw sludge to determine its characteristics prior to the installation of the vibrating screens.

The above items have been accomplished in spite of several unavoidable delays which prevented this project from progressing as proposed. No further delays are expected to hinder the accomplishment of the goals of this demonstration project.

STATEMENT OF PROGRESS

This demonstration project has two objectives:

1. To evaluate the feasibility of employing vibrating screens for the primary treatment of waste water in lieu of conventional primary clarifiers.
2. To investigate the ability of vibrating screens to thicken the sludges removed from both the vibrating screen separation units and the primary clarifier.

To date, efforts have been concentrated on the preparation of the project plans and specifications for the construction of this demonstration facility. A lease-purchase agreement has been entered into with the proprietary equipment supplier and the units were delivered to the project site on February 6, 1968. A contract for the construction of the facility and installation of the screens has been awarded and construction is underway. The demonstration treatment plant is expected to be operational in May, 1968.

An experienced full-time waste water treatment plant operator has been assigned to the project. He is observing the construction of the facility and is familiarizing himself with the laboratory

testing facilities and procedures on the project site. The plant supervisors were consulted during the preparation of the plans and specifications and have provided several helpful suggestions.

Sacramento County has recently increased the normal frequency of sampling at the Central Sanitation District Treatment Plant (project site); thus providing a better description of the plant influent and effluent prior to the installation of the demonstration facility. The raw sludge from the primary clarifiers is being examined, including its digestibility and BTU content. An initial sampling schedule has also been prepared.

The project has encountered several unavoidable, time consuming delays during the initial grant period. These delays are noted in the following statements. Official notification of project award was not received until after the proposed starting date. An improved version of the vibrating screen unit employing collar screens was conceived by the equipment manufacturer after the original proposal was submitted. Following the notice of award, permission was requested and granted to substitute the new model vibrating screen units to pursue the goals of this proposal. Prior to actual fabrication of the improved units the manufacturer requested a legal clarification of the required Patent and Inventions Agreement.

Additional delays were encountered in fabrication and initial operational tests of the new vibrating screen units. The resultant project timing conflicted with the scheduling of workloads of the assigned County personnel during the preparation of the contract drawings and specifications. Development of the electrical control and flow measuring system was more complex than anticipated and required the services of an outside consulting Electrical Engineer. These systems are requiring much longer to fabricate than was allotted in our original proposal.

In spite of these setbacks in our original scheduling construction is currently progressing satisfactorily, and no additional delays or significant problems are foreseeable. The above mentioned delays will prevent the project objectives from being completed within the time period indicated on the approved grant application. However, requested funds will be allocated in a fashion to allow accomplishment of the objectives of this proposal. An extended operation period is essential to evaluate the life and operating characteristics of the vibrating screens under actual sewage treatment operation conditions. Project funds will be allocated in a fashion to allow accomplishment of the objectives using the amounts budgeted for this demonstration project.

No changes have been made in the professional staff for this project during the previous grant period with the exception of a consulting Electrical Engineer who was engaged to design the electrical control panel and flow metering system for this project. A data sheet on this man is attached.

DATA SHEET

CHARLES A. KAUTZER, Consulting Electrical Engineer
(Self Employed) 8071 Broadway Terrace, Oakland, California

Academic Background

University of Wisconsin	B.S. EE 1949
University of California	Graduate School Jan. 1950 - June 1950

Professional Engineering Registration

E 5585, California

Professional Experience

Consulting Electrical Engineer (Self Employed) Includes 5½ years as part time consultant for Sacramento County Department of Public Works, Utilities Division. Work has included design of a 100 station telemetering system with provisions for an automatic printout system.	Oct. 1962
Chief Engineer, Rundel Electric Co., Milbrae, Calif. Design of crane and ground propulsion equipment Saturn IV.	May 1961 to Oct. 1962
Chief Electrical Engineer, Brown and Caldwell Engineering Co., San Francisco, California Greater Vancouver Sewage & Drainage District Sewage Treatment Plant	March 1957 to May 1961
Menlo Research Laboratory	Nov. 1956 to March 1957
Electrical Project Engineer, San Francisco Naval Shipyard, Conversion of U.S.S. Hancock to a canted deck aircraft carrier	April, 1952 to Nov. 1956
Engineering Officer, U.S.S. O'Brien	Nov. 1950 to April 1952
Bechtel Corp. Refining Division	June 1950 to Nov. 1950

Other

Lt. Commander, USNR
Roman Catholic